

Claims

[1] A filter pressure loss measuring apparatus for measuring the differential pressure (pressure loss) of a fluid, which occurs when the fluid passes through a filter having an inflow end face through which the fluid enters and an outflow end face through which the fluid is discharged, the apparatus comprising filter holding means capable of holding the filter; fluid passing means for causing the fluid to pass through the filter; flow rate measuring means for measuring the flow rate of the fluid which passes through the filter; pressure loss measuring means for measuring the pressure loss of the fluid, which occurs when the fluid passes through the filter at a flow rate as measured through the flow rate measuring means; a flow path which connects the aforementioned four means such that the fluid can pass between the means; and flow rate regulating means for regulating the flow rate so as to maintain a constant level, the flow rate regulating means having a tributary path which is branched from the flow path (mainstream path) and communicates with the outside, and one or more flow path opening/closing members capable of, in conjunction with the level of the fluid flow rate as measured through the flow rate measuring means, opening or closing the mainstream path or the tributary path such that the flow path opening ratio of each of the paths varies continuously or intermittently, whereby the pressure loss is measured while the flow rate of

the fluid which passes through the filter is maintained at a constant level by the flow rate regulating means.

[2] A filter pressure loss measuring apparatus according to claim 1, wherein each of the flow path opening/closing member(s) has a predetermined rotation shaft, has a fan-shaped cross section as viewed in a plane perpendicular to the rotation shaft, and is provided in the mainstream path so as to be rotated about the rotation shaft provided at the pivot of the fan-shaped member, so that when the member is rotated at a predetermined angle in conjunction with the level of the fluid flow rate as measured by the flow rate measuring means, the member can open or close the mainstream path or the tributary path such that the flow path opening ratio of each of the paths varies continuously or intermittently.

[3] A filter pressure loss measuring apparatus according to claim 1 or 2, wherein the fluid passing means is a turbo blower having a discharge pressure of 5 kPa or more.

[4] A filter pressure loss measuring apparatus according to any one of claims 1 through 3, which further comprises measuring means capable of measuring a physical quantity indicative of environmental conditions under which pressure loss in the filter is measured.

[5] A filter pressure loss measuring apparatus according to any one of claims 1 through 4, wherein the filter holding means comprises a first holding means element for holding a portion of the filter located on the side of the inflow end

face; and a second holding means element for holding a portion of the filter located on the side of the outflow end face, at least one of the first and second holding means elements including one or more tubular elastic sealing members which have, in at least a portion thereof, a hollow portion and are provided to form a ring, and a frame which is provided outside the elastic sealing member(s), wherein, when an end portion of the filter including the inflow end face and/or the outflow end face is placed inside the elastic sealing member(s), and gas or liquid is brought into the hollow portion of the elastic sealing member(s), the elastic sealing member(s) expand(s), and close contact is established between a peripheral surface of the filter and the elastic sealing member(s), between the frame and the elastic sealing member(s), and between the elastic sealing members, whereby the filter is held in position.